

# Heart MEMO

*From the National Conference:*

## *The Changing Face of Cardiovascular Health*

Change was the theme of the first National Conference on Cardiovascular Health—changes in the health care system, in cardiovascular disease (CVD) trends, and in the practice of cardiovascular medicine as we head into the next century.

The landmark meeting, subtitled “Coming Together for the 21st Century,” took place February 19-21, 1998, in San Francisco, CA. Nearly 1,200 researchers and health care professionals gathered to hear about the latest developments in prevention and treatment of CVD and to brainstorm with their colleagues.

Many more participated without leaving home. Some 2,000 viewers saw the major sessions broadcast live via satellite at 165 local videoconferences. Still others, participating in a “net conference,” got transcripts of major sessions and discussed the issues by electronic mail.

Three years in the making, the conference capped much hard work by its four sponsors: the National Heart, Lung, and Blood Institute (NHLBI); the University of California, San Francisco; the Cardiovascular Disease Outreach, Resources, and Epidemiology (CORE) Program; and the California Cardiovascular Disease Prevention Coalition. Dr. Stephen Fortmann of the Stanford Center for Research in Disease Prevention in California was program chair; cochairing the conference were NHLBI Director Dr. Claude

Lenfant and Dr. Wes Alles, head of the California Cardiovascular Disease Prevention Coalition.

Noting that the NHLBI celebrates its 50th birthday this year, Dr. Lenfant told the opening plenary audience, “The past 50 years have seen tremendous advances in cardiovascular care—and our medical research will undoubtedly continue to pay handsome dividends in the future. We can only imagine what breakthroughs lie ahead.”

Reflecting the change theme, opening session speakers addressed the “Past, Present, and Future—Changing Paradigms in Cardiovascular Health.” Here are highlights from that session:

Dr. Robert Brook tackled one of the hardest questions: how to maintain quality care for CVD patients in a cost-conscious 21st century. He is professor of medicine at the University of California, Los Angeles and director of the RAND Corporation Health Sciences Program.

Dr. Brook framed the problem: although “there has been exponential growth in science, the use of science in practice is at best too slow. At worst, we have a chaotic health care system that does not deliver the

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## Letter From The Director

### DEAR HEARTMEMO READERS:

I am pleased and proud to report that the National Conference on Cardiovascular Health, held February 19-21 in San Francisco, was a great success. This historic gathering brought together researchers, public health experts, practitioners, and other health care professionals from across the Nation and around the world. On the agenda were sessions examining virtually every aspect of cardiovascular health and disease—including the latest research findings, new clinical management approaches, creative prevention strategies, health care delivery trends, and cutting-edge communication techniques.

This issue of *HeartMemo* brings you highlights from the conference. For example, in HeartFile you will find roundups of the major sessions on high blood pressure control and high blood cholesterol. Our cover story recaps the opening plenary session, "Past, Present, and Future—Changing Paradigms in Cardiovascular Health." These speakers took on difficult but critical issues: what the trend toward managed care will mean for

cardiovascular health—what lies ahead in cardiovascular medicine—and much more.

As you can imagine, putting on this conference was a great deal of work. For their tireless efforts we must thank our cosponsors: the University of California, San Francisco; the Cardiovascular Disease Outreach, Resources, and Epidemiology (CORE) Program, a joint effort of the California Department of Health Services and the University of California, San Francisco's Institute for Health and Aging; and the California Cardiovascular Disease Prevention Coalition, a partnership of 30 statewide organizations.

When we planned the conference, one of our goals was to bring new momentum to the fight against heart disease. That fight is by no means over. Despite great strides made over the past 50 years in reducing the burden of cardiovascular illness, more people still die from heart disease and stroke than from any other single cause. Moreover, recent data show a slight rise in the death rate for stroke; a slowing in the decline of the death rate for coronary heart disease; and an alarming jump in the prevalence of heart failure among older Americans.

But heart health is more than the absence of disease, and that brings me to the conference's second goal: to promote cardiovascular health by addressing lifestyle and quality-of-life issues. Since its beginnings 50 years ago, the NHLBI has pioneered innovative ways to promote cardiovascular health—and will continue to do so into the 21st century. Our work is cut out for us. Today some 58 million Americans still have some form of cardiovascular disease. And more Americans are overweight and less physically active than ever before—two key risk factors for heart disease.

I urge *HeartMemo* readers to renew and strengthen your efforts in the war against cardiovascular illness. The statistics tell us that we've come a long way but we have a long way to go. I see the national conference as a milestone for the dramatic advances we will see on every front of cardiovascular medicine in the next century. ■



Claude Lenfant, M.D.  
Director, NHLBI



# The National High Blood Pressure Education Program

## NATIONAL CONFERENCE SESSION HIGHLIGHTS BLOOD PRESSURE CONTROL

High blood pressure control was the focus of a major session at the National Conference on Cardiovascular Health. Called "High Blood Pressure Control at the Millennium," the panel discussion brought together a nationally recognized group of experts in preventive medicine to review the progress and future of high blood pressure control.

Moderator Dr. Jerome D. Cohen began with a brief overview of the history of our understanding of blood pressure. As early as 1915, he said, we knew that blood pressure played an important role in health, and by the 1930s, the earliest drugs to treat high blood pressure had been introduced. However, it was not until the late 1960s that research provided evidence that treating high blood pressure reduced mortality.

In 1972, the National High Blood Pressure Education Program (NHBPEP) was formed to raise awareness, treatment, and control of high blood pressure in the Nation. "The importance of the NHBPEP is shown in the steady decrease in morbidity and mortality rates from stroke and heart attack," said Dr. Cohen. "However, since 1990 awareness has decreased, treatment has been stagnant, and control has declined. We cannot be complacent. Despite the progress made in informing the public of the dangers of uncontrolled high blood pressure, there is still room for improvement."

Dr. Paul Whelton reported that

there is concern that awareness, treatment, and control rates are leveling off or perhaps even falling. "Hypertension is still very prevalent in the United States, and it is higher among African Americans and older Americans," he noted. National data show that only about two out of three people with high blood pressure (140/90 mm Hg or greater) are aware that they have it; only one out of two people with high blood pres-

*"Our changing health care system also puts limitations on both physicians and patients that can affect follow-up visits, the types of drugs prescribed, or the availability of other resources to treat or prevent high blood pressure."*

sure is being treated; and one out of four people with high blood pressure is controlling his or her blood pressure to below 140/90 mm Hg. To achieve better treatment and control, he said, efforts must focus on specific populations that provide the biggest challenges, such as African Americans, people with diabetes, and older Americans.

Dr. Elijah Saunders presented data showing that African Americans continue to have the highest hypertension rates in the Nation. While 24 percent of the total U.S. adult population has high blood

pressure, among African Americans the rate is almost 29 percent. African Americans also have an earlier onset of high blood pressure as well as more adverse consequences. African Americans have between 3 and 6 times more strokes, 1.5 times greater incidence of heart disease, and 5 times more end-stage renal disease than other ethnic groups.

Challenging the health care system to respond, Dr. Saunders said, "We know the problems and now we need to formulate some goals of treatment. For example, lifestyle changes, especially reduced sodium intake and weight loss, can go a long way to help control high blood pressure in many African Americans." Personal and environmental stress also contributes significantly to high blood pressure in many African Americans, he said. African Americans respond differently to antihypertensive drugs than other populations do; in general, better responses have been shown to diuretics and worse responses to beta-blockers and angiotensin-converting enzyme (ACE) inhibitors. Combina-

tion therapy has been shown to be a successful strategy, yet few physicians consider this when prescribing drugs.

Dr. James Sowers described an increase in the prevalence of

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hypertension and diabetes as the population ages. Among some demographic groups, such as African Americans, the effect is more pronounced. Research on hypertension in people with diabetes is limited, and much of it is based on renal outcomes, not cardiovascular outcomes.

Dr. Sowers said that lifestyle changes, such as reducing caloric intake, should be an important adjunct for people with diabetes and hypertension. Research shows that ACE inhibitors have been shown to be an effective drug therapy in this population because they control blood pressure while providing renal protection. His summary: "It's clear that the problem of taking care of the patient with hypertension and diabetes is a challenge. Hopefully we will know more from the results of the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT) about the effectiveness of lowering blood pressure to avoid cardiovascular events in

people with these conditions."

Dr. Henry Black reported that "cardiovascular disease in the elderly is a major cause of death, and better control of hypertension could have a significant positive effect on this population." The elderly population spends about 40 percent of the U.S. health care dollar, so there is an economic incentive to reduce premature mortality and morbidity. This incentive also holds for younger individuals. Although treatment in young people seems expensive, it is more cost-effective to treat high blood pressure than to spend money on the consequences, such as stroke.

Dr. Martha Hill outlined the challenges in treating high blood pressure and the need to develop strategies for improving adherence to therapy. Among factors to consider are special populations that need attention, approaches to improved awareness and treatment, and coordinating systems to focus on control. "We have to consider issues of where people live and the environment in which patients need to be taking care of

their hypertension," Dr. Hill said.

The challenges to care, she said, include patient-related factors, health care professional factors, health care system factors, organizational factors, and the increasing complexity of managed care and health insurance policies. The current lack of systems approaches can create solutions to some issues that create problems in other areas. For example, pharmacies provide child-proof cap bottles that many older Americans have difficulty opening. Patients do not fully comprehend the benefits of treatment and so compliance decreases. Physicians do not necessarily believe that treatment to below 140/90 mm Hg is warranted or beneficial.

Dr. Hill summarized the challenges: "Our changing health care system puts limitations on both physicians and patients that can affect follow-up visits, the types of drugs prescribed, and the availability of other resources to treat or prevent high blood pressure. All of these issues must be considered when developing effective treatment plans."

(see related story on page 6)

## HIGH BLOOD PRESSURE CONTROL AT THE MILLENNIUM—PANEL MEMBERS

Jerome D. Cohen, M.D., Moderator  
Director of Preventive Cardiology  
St. Louis University Medical  
Center

Henry R. Black, M.D.  
Chairman, Department of  
Preventive Medicine  
Rush-Presbyterian-St. Luke's  
Medical Center

Martha Hill, Ph.D., R.N.  
President, American Heart  
Association  
Associate Professor  
Johns Hopkins University

Elijah Saunders, M.D.  
Head, Division of Hypertension  
University of Maryland School of  
Medicine

James R. Sowers, M.D.  
Director, Division of Endocrinology,  
Metabolism, and Hypertension  
Wayne State University School of  
Medicine

Paul K. Whelton, M.D., M.Sc.  
Dean, Tulane University School of  
Public Health



# The National Cholesterol Education Program

## HIGH BLOOD

### CHOLESTEROL: WHAT'S KNOWN, WHAT'S NEW, WHAT'S AHEAD

Cholesterol as a cardiovascular risk factor was a central theme at the National Conference on Cardiovascular Health. In fact, no fewer than eight sessions were devoted to the topic. Space does not allow us to fill you in on all of them—so here are highlights from the main Grand Ballroom session, “Cholesterol Control: A Key To Preventing and Treating Atherosclerosis”:

Dr. Luther T. Clark opened the crowded agenda with a look at trends in cholesterol awareness, levels, detection, treatment, and control. Dr. Clark is chief of the Division of Cardiovascular Medicine and professor of medicine at the State University of New York Health Science Center, Brooklyn, NY.

“Public awareness of cholesterol is high,” he summarized. “Attitudes, awareness, and knowledge of cholesterol have increased. And National Cholesterol Education Program (NCEP) guidelines for cholesterol management have become established practice.”

Average cholesterol levels have declined from 220 mg/dL in 1961-62 to 203 mg/dL or lower in the most recent data from the third National Health and Nutrition Examination Survey (NHANES III). Age-adjusted coronary heart disease mortality rates also have dropped. Still, projected figures for cardiovascular disease beyond the year 2000 suggest that these rates of decline may be “flattening out. Obviously, there is still a need for con-

tinued efforts,” Dr. Clark concluded.

Dr. Linda Van Horn, professor of preventive medicine at Northwestern University School of Medicine in Evanston, IL, focused on trends in diet and food consumption. Her assessment: there has been substantial improvement, but there is room for a lot more. This was clear from an analysis of food trends in a U.S.

Department of  
Agriculture



nationally representative survey of food consumption patterns among ages 19 to 50, from 1965 to 1995. The good news: “when we look at the percentage of total fat intake over the past 30 years, there has been a steady decline overall in both men and women.” But “around two-thirds of Americans still eat more than 30 percent of their calories as fat, and calorie intake has remained fairly stable over the past 30 years,” she said. Similarly, in the NHLBI’s Coronary Artery Risk Development in Young Adults (CARDIA) study of 5,115 men and women ages 18 to 30, “the vast majority continued to consume a high-fat diet” at the end of the 7-year intervention.

Where do Americans get their fat and calories? Research shows that low-fat eaters consume more rice, pasta, and bread, and children in the low-fat eater category tend to consume more milk and fruit.

For high-fat eaters, desserts, hamburgers, and, above all, french fries are the main sources of dietary fat. Children in this group eat more meat, as one would expect, and less milk or fruit, Dr. Van Horn noted.

In closing, she said, “the vast majority of the population still eats more than 30 percent of their calories as fat. Efforts to reinforce this message, to encourage label reading and widespread awareness of the dietary prevention of cardiovascular disease, are needed to meet the goals we have set.”

Dr. John C. LaRosa, chancellor of Tulane University Medical School in New Orleans, LA, reviewed the scientific basis for nutritional interventions to lower cholesterol. His first slide got everyone’s attention: a photo of a bear next to an example of *Homo sapiens*.

“These are two mammals,” Dr. LaRosa said. “Both eat diets high in fatty meat. However, there are important differences. The bear has sharp, tearing teeth, short intestines, a cholesterol level of 500 to 600 mg/dL, and no atherosclerosis. Humans, on the other hand, have flat, grinding teeth, long intestines, cholesterol levels between 150 and 300 mg/dL—all more typical of herbivores—and atherosclerosis.”

His point: “We are natural herbivores and simply do not have the

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## ALLIANCE FOR HEALTH: NEW CLINICAL GUIDE TELLS HOW TO CONTROL HIGH BLOOD PRESSURE IN OLDER WOMEN

"You have what it takes to control high blood pressure" is the message of a new clinical guide for health care professionals on controlling high blood pressure in older women.

The NHLBI teamed up with the Alliance for Aging Research, an independent nonprofit health research advocacy group, to produce this tool for health care professionals. Supported by an unrestricted educational grant from Hoechst Marion Roussel, Inc., the guide is part of a joint national campaign to improve hypertension prevention and control in older women and reduce the incidence of heart failure.

Fewer than one in four women age 60 and older is controlling her blood pressure sufficiently. Rates of heart failure are increasing dramatically, especially among older Americans.

The health care costs of heart failure are about \$12 billion each year—one of the largest components of the Medicare budget.

"Hypertension is a widespread, deadly, yet readily treatable condition among older people in this country," said NHLBI Director Dr. Claude Lenfant. "Women make up a disproportionate share of the older population, have poor hypertension control rates, and carry a greater risk of developing and dying from heart failure."

The guide includes:

- a clinical reference manual on treating and controlling hypertension in older women;
- a quick reference card that summarizes diagnostic techniques, treatment strategies, and follow-up protocols;
- an educational brochure for women who have high blood pressure;
- a form to order more copies of the patient brochure and clinical guide; and
- profiles of the program sponsors.

The guide emphasizes that controlling high blood pressure is a joint

effort between the patient and the health care provider. The consumer brochure explains in detail how patients can adopt lifestyle modifications that have been shown to reduce blood pressure. The reference manual provides tips to health care professionals on improving adherence to lifestyle modifications and pharmacologic therapy.

***"Women make up a disproportionate share of the older population, have poor hypertension control rates, and carry a greater risk of developing and dying from heart failure."***

In November 1997, the guide was mailed to 245,000 health care providers across the Nation. To order a free copy, call the NHLBI Information Center at 301-251-1222 and ask for publication #55-851. Many other consumer publications on controlling high blood pressure are also available from the Information Center. ■

## The National Heart Attack Alert Program

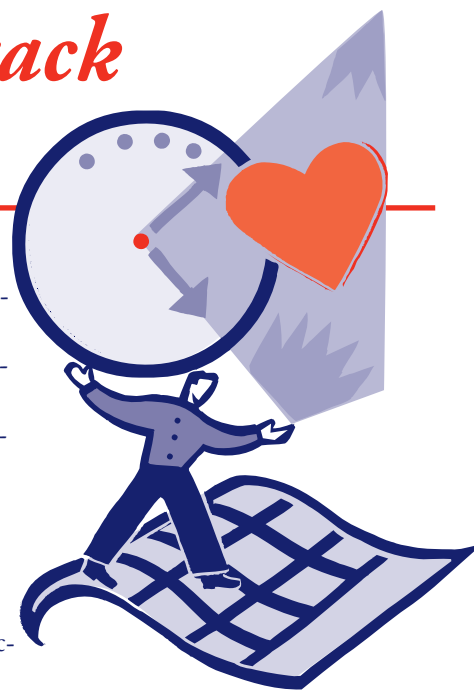
### NEW REPORT TARGETS COMMUNITY AS THE "ULTIMATE CORONARY CARE UNIT"

"Since 60 to 70 percent of sudden deaths by cardiac arrest occur before hospitalization, it is clear that the community deserves to be the ultimate coronary care unit," the American Heart Association has said.

The National Heart Attack Alert Program (NHAAP) supports that

view—and to help communities plan access to timely care for heart attack victims, NHAAP has just issued a new report. Its title: *Access to Timely and Optimal Care of Patients With Acute Coronary Syndromes—Community Planning Considerations*.

"We hope it will serve as a blueprint and a resource for planning emergency cardiac care at the local level," said NHAAP Executive Committee Chairman Dr. James M. Atkins, medical director, Emergency Medicine Education,



University of Texas Southwestern Medical Center, Dallas, TX.

Like trauma victims, heart attack patients have a much better chance of survival when treated promptly—ideally within 1 hour, sometimes called the “golden hour.” Advanced technology and early intervention can save many lives, research has documented. Even so, the statistics are still alarming. In 1994, 1.25 million Americans had a heart attack, and nearly 500,000 died. More than half of those deaths happened suddenly and outside a hospital and might well have been prevented with rapid detection and treatment.

*“We hope it will serve as a blueprint and a resource for planning emergency cardiac care at the local level.”*

The NHAAP report details the essential elements of a community plan for emergency cardiac care and gives examples of model plans. It recommends strategies for planning for cardiac emergencies based on the essential elements of a community plan. The goal of a community plan, it says, is to provide an optimal “chain of survival” (see box at right) by minimizing or eliminating factors that delay or restrict emergency treatment.

The report will be mailed to every State health department in the United States and will appear in a special supplement to the *Journal of Thrombosis and Thrombolysis* in summer 1998. It also will be posted after publication on the NHAAP page of NHLBI’s Web site at <http://www.nhlbi.nih.gov/nhlbi/cardio/heart/prof/hattkhc.htm>. ■

## STEPS TO SURVIVAL

The American Heart Association has proposed the concept of a “chain of survival” for heart attack victims. The chain has four parts:

- Early access to the emergency medical services system
- Early cardiopulmonary resuscitation by bystanders or first responders
- Early defibrillation by first responders, emergency medical technicians, or paramedics
- Early advanced cardiac life support: defibrillation, intubation, drug therapy.

Each link in the chain must be strong to ensure maximum survival rates for people who have a heart attack outside a hospital. The NHAAP’s new report shows how communities can work to strengthen each part of the survival chain.

### New Information Technology for a New Century

“New Information Technology and the National Heart Attack Alert Program: Setting a 5-Year Agenda” was held April 14-15 at the National Institutes of Health (NIH) in Bethesda, MD. Participants explored how new tools coming from information technology can aid rapid diagnosis and treatment of heart attacks.

The discussions by health care professionals and information technology experts were lively and informative. Watch for details in the next *HeartMemo*.

# The NHLBI Obesity Education Initiative

## WHAT ARE EVIDENCE-BASED GUIDELINES?

In 1995, the NHLBI’s Obesity Education Initiative (OEI) appointed an expert panel to develop guidelines on identifying, evaluating, and treating obesity in adults. It was the first panel convened under a new NHLBI directive that such groups use an evidence-based approach to develop clinical guidelines.

In 1998, as the panel gets ready to release 3 years of work synthesizing the science of obesity diagnosis and treatment, health care professionals can see and judge the results for themselves. Why do it this way? How is the evidence-based process different from, and better than, methods used before?

Panel chair Dr. F. Xavier Pi-Sunyer explains: “The definition of practice guidelines given by the

Institute of Medicine is that they are systematically developed statements to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances. To meet this goal, it is important to look at the literature and make conclusions only on evidence-based information.

“This has been an exciting new venture for us,” adds Dr. Pi-Sunyer,

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who is director of the Obesity Research Center at St. Luke's/Roosevelt Hospital Center and professor of medicine at Columbia University in New York City. "We were asked to develop the NHLBI's first clinical guidelines for treating obesity and to pioneer an evidence-based model for future guidelines."

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Although the evidence-based process is complex, its basic structure is as follows:

- Develop an evidence model that illustrates a list of key clinical questions about obesity that should be answered by the evidence—for example, "What is the evidence that relates weight to cardiovascular disease? What is the evidence that weight loss directly affects high blood pressure?"
- Conduct extensive searches through the scientific literature, using MEDLINE and other biomedical databases, to track down all relevant research articles.
- Screen these citations, cull out the most significant research reports, abstract the data into evidence tables for panel members to evaluate, and develop criteria to judge the evidence.
- Develop treatment recommendations based on this evidence.

Starting with a MEDLINE search that turned up more than 44,000

citations, the panel went through several screenings that narrowed the list down to about 25,000 records. After further rounds of screening, the panel identified 2,440 abstracts as possibly important enough to retrieve the full articles. In the end, 394 articles—all reporting results from randomized clinical trials—were selected for review and analysis.

To date, the panel has identified and considered evidence for 33 key questions about the relationship between weight and other factors. An example: what is the evidence that dietary interventions effect a change in weight loss? "We found 86 randomized trials that evaluated the effectiveness of diets on weight loss," said Dr. Pi-Sunyer. "Some of these were low calorie, very low calorie, reduced fat, and vegetarian.

"We then framed questions regarding interventions that the primary care physician might want to use and looked at the evidence as to whether these interventions were successful or not," he explained.

A critical step was to rate the strength of the evidence for each recommendation in the guidelines. The panel devised these rankings:

- "A" denotes strong evidence from well-designed, randomized, controlled clinical trials.
- "B" means suggestive evidence, from the same kind of randomized controlled trials, but a smaller number of studies or a less consistent pattern of findings.
- "C" is suggestive evidence from nonrandomized studies—for example, observational studies or uncontrolled trials.
- "D" denotes expert judgment—evidence from clinical experience or experimental research.

Assisting this massive effort is an international group called the Cochrane Collaboration. The Cochrane group prepares, maintains,

and disseminates systematic reviews and meta-analyses of health care interventions. Cochrane's San Antonio Center in Texas has been helping the panel by abstracting scientific literature, critiquing it methodologically, and organizing data into tables that summarize the evidence.

What emerges will be a set of treatment guidelines based on a careful and comprehensive review of the most relevant scientific literature. The guidelines promise to provide a priceless tool for physicians, dietitians, nurses, exercise specialists, and other health professionals who work with overweight patients. An accompanying compendium of the most relevant research on obesity will be an important resource for researchers.

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***"The guidelines document how different strategies, such as diet and physical activity, affect weight loss and how weight control affects the major risk factors for heart disease and stroke."***

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"The guidelines document how different strategies, such as diet and physical activity, affect weight loss and how weight control affects the major risk factors for heart disease and stroke," said NHLBI OEI Coordinator Karen A. Donato.

The Expert Panel on the Identification, Evaluation, and Treatment of Overweight and Obesity in Adults comprises 23 experts in different fields of obesity treatment as well as a methodologist consultant. Their report is expected to be released in summer 1998 and will be featured in a future issue of *HeartMemo*. ■



# The Cardiovascular Health Promotion Project

## CATCH CATCHES ON IN TEXAS

NHLBI's school-based heart health education program, the Child and Adolescent Trial for Cardiovascular Health, or CATCH, has caught on in Texas in a big way.

The State has bought 400 sets of the CATCH curriculum for local schools and is teaming up with State and local school, health, and nutrition agencies to use CATCH to promote cardiovascular health among Texas schoolchildren.

"We know that good nutrition and physical activity improve health status, cognitive skills, and behavior. It is a win-win for both public health and schools," said Peter Hoffman, program specialist with the Texas Department of Health.

CATCH's field-tested materials include:

- A physical education curriculum with lesson plans; a set of more than 350, 5" x 8" cards showing fun, easy-to-teach activities; and three videotapes that show kids and instructors in action.
- Heart-healthy classroom curricula, with family components, for grades 3, 4, and 5.
- An "eat smart" school cafeteria program guide.

Initially the State tried to interest schools in CATCH by mailing a description of the program to all schools statewide. The response was poor. "We learned that written descriptions do not adequately project the quality of the CATCH materials," Mr. Hoffman said. "Seeing is believing."

That lesson was brought home when the State arranged for onsite

demonstrations of CATCH to local school representatives. "We gave our public health partners copies of the CATCH materials. They are contacting the schools and doing onsite demonstrations, with great success,"

*"CATCH is a win-win for both public health and for schools."*

Mr. Hoffman related. "When school representatives see the entire CATCH curriculum, they cannot believe the quality of the materials."

The city of El Paso has become a model for CATCH projects in Texas. There, the Paso Del Norte Foundation took the lead in developing a regional coalition to promote better nutrition and physical fitness for all El Paso residents. They called their project Border Lean, after the nationwide Project Lean initiative to get people to eat less fat. Coalition members recommended that a school-based initiative be the foundation for the initiative—and after a lengthy review of available programs, chose CATCH for the school component.

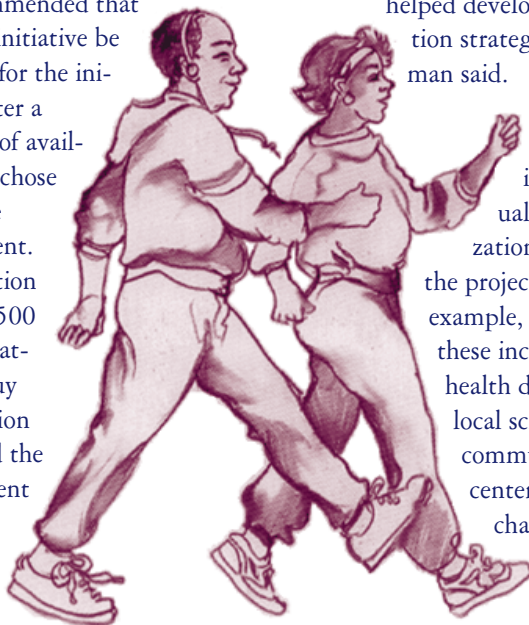
The Foundation is donating \$3,500 to each participating school to buy physical education equipment, and the Texas Department of Health provides CATCH materials and training for the

family component. Twenty-two schools are participating in school year 1997-98, with another 25 projected for 1998-99.

Essential to the project were partnerships at both the State and local levels. Within State government, collaborations were developed among the Texas Education Agency's Child Nutrition Program and Health and Physical Education Program; the Texas Department of Human Services' Nutrition Education and Training Office; and the Texas Department of Health's Bureau of Nutrition Services, Office of Tobacco Control and Prevention, and Texas Comprehensive School Health Network. In addition, the Texas Diabetes Council is underwriting many costs of the project. Also key to the project was the University of Texas, which made many personal contacts to promote the program and provided training to local school systems. "Each of these agencies assumed ownership of CATCH in Texas and helped develop implementation strategies," Mr. Hoffman said.

At the local level, partners include individuals and organizations that support the project's goals. For example, in El Paso these included the local health department, the local school system, community health centers, and local chapters of voluntary health groups

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such as the American Heart Association.

What was learned in Texas that can be applied elsewhere? A surprising tip from the Texas experience is that it's better to charge schools a minimal cost rather than donate the materials outright. Mr. Hoffman explains: "Schools need to have some ownership of the materials, even if it is minimal. And we have not had one school report that price was a barrier."

*"When school representatives see the CATCH curriculum, they cannot believe the quality of the materials."*

Finally, partnerships at both the State and local levels are essential to the success of the program. "Using our existing public health infrastructure has proved to be very effective in diffusing the CATCH materials," said Mr. Hoffman. Partners also can help

with training school staff, a critical component of a successful program.

"We encourage other States and organizations to create similar collaborative projects to implement CATCH in their communities," says Karen A. Donato, coordinator of the NHLBI's Cardiovascular Health Promotion Project. For prices and ordering information, contact the NHLBI Information Center at 301-251-1222. ■

## Minority Populations

### UNIVISION AND NHLBI JOIN FORCES TO PROMOTE HEART HEALTH AMONG LATINOS

The NHLBI has forged a powerful new partnership with the nationwide Latino television network Univision to fight cardiovascular disease among Latinos.

Over the next 6 months, Univision will air a series of mini-telenovelas in prime time on television stations that it owns and operates in major Hispanic markets throughout the United States. The telenovelas also will run on Galavision, Univision's Spanish language cable network. Telenovelas are short, humorous "slices of life" that feature the Ramírez family's efforts to change their lifestyle to prevent cardiovascular disease. The telenovelas are part of the NHLBI's comprehensive Latino outreach program Salud para su Corazón.

Said NHLBI Director Dr. Claude Lenfant: "Cardiovascular disease is the leading cause of death for Latinos, the fastest-growing segment of the

American population. It's time to take bold action in this area of public health."

At a press conference February 18, 1998, in Los Angeles, the Institute and Univision encouraged Latino community leaders to initiate and support educational efforts to reduce cardiovascular disease in the Latino community. With one out of four Latino deaths attributable to heart disease, the partners urged Latino health professionals, community leaders, and the media to join forces to bring public health messages to Latinos.

"Many Latinos are cut off from public health messages because they don't speak English," noted Matilde Alvarado, NHLBI minority outreach coordinator. To bridge that gap, the NHLBI developed Salud para su Corazón. This program uses Latino traditions to offer science-based heart health messages, bilingual educational materials, and strategies for implementing the program in communities.

To help Univision viewers get more information, the NHLBI and the Department of Health and Human

Services Office on Minority Health are sponsoring a toll-free number that will be shown at the end of the telenovelas. Callers reach a Spanish-speaking operator who can refer them to products and resources in Spanish, including the wealth of bilingual materials from Salud para su Corazón.

*"Cardiovascular disease is the leading cause of death for Latinos, the fastest-growing segment of the American population. It's time to take bold action in this area of public health."*

These include eight easy-to-read booklets in Spanish and English; a bilingual cookbook; radio and television programs on keeping the heart healthy; and a bilingual guide for organizing charlas, which are group discussions on cardiovascular health at local community sites.

Meanwhile, aiding the effort, the National Council of La Raza—the

Nation's largest network of Hispanic organizations, with strong roots in Hispanic communities—is conducting a survey of 600 of its affiliates and network members to identify needs and opportunities for promoting heart health in sites around the country.

“Given the continuing escalation of cardiovascular disease in the United States, each and every Latino must get involved,” said Dr. Henry Pacheco, director of health promotion for the National Council of La Raza.

### “NEWS INSERT” HITS THE STANDS

In another collaboration, the National Institutes of Health and several of its institutes, including the NHLBI, are contributing to, and will be featured in, a Spanish-language newspaper insert called Pro Salud.

Somewhat like *Parade* magazine, the news insert will appear bimonthly in Spanish-language newspapers in eight major Hispanic markets around the Nation: New York City, Miami, Los Angeles, San Francisco, Chicago, Houston, San Antonio, and Puerto Rico. For example, it will be carried by *El Diario/La Prensa* (New York City), the oldest Spanish-language daily in the United States, and by *El Nuevo Día*, Puerto Rico's largest daily paper, which reaches some 150,000 readers. The total potential readership for Pro Salud is estimated at 3.5 million.

Inside, readers will find articles in Spanish on health issues of interest to Latino communities. NHLBI's page in the first issue includes lively pieces on reducing risk factors for heart disease, heart-healthy eating, and Spanish-language heart health publications available from the NHLBI. There's also a toll-free phone number that readers can use to reach a Spanish-speaking operator and get more information. ■

### FOR AFRICAN AMERICANS: SEVEN BOOKLETS AND A COOKBOOK

Following up on the success of its eight easy-to-read heart health booklets for Latinos, the NHLBI has produced a similar series aimed at African American audiences.

With catchy titles and eye-catching graphics, each of the eight-page booklets covers a major risk factor for cardiovascular disease and what can be done to prevent it. On the back cover is a checklist or log where readers can record lifestyle changes related to that topic—for example, a calendar for physical activity and a checklist of ways to lose weight. The cookbook features low-fat, low-sodium versions of popular African American foods such as homestyle biscuits, candied yams, and barbecued and fried chicken.

To order the seven-booklet package (#55-832, \$3) and the cookbook (#3792, \$2.50), call the NHLBI Information Center at 301-251-1222. ■





# Women

## HEART DISEASE RESEARCH IN WOMEN: A LOOK BACK AND A VIEW TO THE FUTURE

"For nearly a century, heart disease has been the leading cause of death in American women," NHLBI Director Dr. Claude Lenfant told several hundred researchers and health care professionals gathered in Bethesda, MD, last November. "And as things stand now, nearly one-third of the women in this room are likely to die of it."

Dr. Lenfant was a keynote speaker at "Beyond Hunt Valley," a 3-day followup to the original 1991 Hunt Valley, MD, conference on women's health research. Conferees came from around the country to hear science updates and plan a women's health research agenda for the next century.

In his address Dr. Lenfant posed the two big questions that have been raised about heart disease research in women:

- Has research on heart disease neglected women?
- Has research on heart disease benefited women?

The answer to the first question, he said, is generally "no." Of the NHLBI's 59 major (at least 400 participants) clinical trials of cardiovascular disease in adults, 41 included men and women, 14 included only women, and only 4 covered just men. In these four, men were selected as the study population for two reasons: overriding public health considerations and pragmatic considerations, Dr. Lenfant said. For example, at the time two of these studies were begun, the heart disease epidemic was at its peak—and men were the population segment most affected. Similarly, certain recent and current studies

include only women for similar public health and pragmatic rationales. An example is the massive Women's Health Initiative, begun in 1991 and recently placed under NHLBI's management (see below). Its goal is to determine whether hormone replacement therapy does in fact prevent heart disease in women—a major

question for current clinical practice.

Dr. Lenfant's answer to the second question was "a big yes and a cautionary no."

"In support of the yes, let me point out that the declines we've witnessed in overall death rates from heart disease have been spectacular both in men and in women," he

### THE WOMEN'S HEALTH INITIATIVE

One of the toughest questions facing postmenopausal women is whether to use hormone replacement therapy (HRT). This treatment has been found to improve some heart disease risk factors but may pose other dangers, including a greater chance of breast cancer.

The answer will come from the Women's Health Initiative (WHI), a large-scale, long-term clinical trial that will determine whether HRT really prevents coronary heart disease and osteoporosis (bone thinning) in older women and whether it raises the risk of breast and colon cancer.

Begun in 1991 and recently transferred to the NHLBI, WHI is one of the largest studies of its kind ever done in the United States. More than 167,000 women ages 50 to 79 will be studied over 15 years. Of those, 67,000 will participate in the clinical trial and 100,000 in a strictly observational study to look for predictors and biological markers of disease.

In the clinical trial, women can enroll in one, two, or all three components: HRT use, a diet low in fat and high in fiber, and calcium and vitamin D supplementation. Women who enroll in the HRT part will take hormone pills or a placebo. Researchers can then study HRT's long-term effect on coronary heart disease, bone thinning, and breast cancer.

In the diet change study, women will follow their usual eating pattern or a diet low in fat and high in fruit, vegetables, and grains. The goal is to see if this diet reduces breast and colorectal cancer as well as heart disease. In the third part of the trial, researchers will determine if calcium and vitamin D supplements prevent bone fractures from osteoporosis.

Finally, a community prevention study will test ways to get women to adopt healthy behaviors. This study will try to develop model programs that can be implemented nationwide.

"In 1990, there were 37.5 million adult women over age 50 in the United States," said Dr. Suzanne S. Hurd, director of the NHLBI's Division of Lung Diseases and acting director of the WHI. "For them, this study promises not only a new century in women's health but a new era as well."

For information and updates on WHI, call the NHLBI Information Center at 301-251-1222 or check the WHI web site: <http://www.nhlbi.nih.gov/nhlbi/whi/> ■



noted. "The rate in women is actually 37 percent lower than it was at the turn of the century in 1900."

Why, then, the qualified "no"? "Women are not taking full advantage of the heart-saving information that we

***"We can pour millions of dollars into research, but the yield will be low if women and their physicians fail to use this knowledge to improve women's health."***

already possess," Dr. Lenfant said. "Risk factors for heart disease in women have been known for years, and we have made intensive efforts to educate the public about them. But their current prevalence is disturbingly high—higher, in some cases, than in men."

For example, he observed, the NHLBI's popular *Healthy Heart Handbook for Women* has appeared in three different versions over the past 10 years with its central message that "heart disease is every woman's concern." Yet a recent survey of women published in *USA Today* revealed that women's perception of heart disease as a health risk vastly underestimates its true risk, Dr. Lenfant said.

"In the area of hypertension," he continued, "our record of including women in clinical trials has been impeccable, and we continue to generate new evidence of the benefits of hypertension control, even in the elderly. Yet recent data show dismal blood pressure control rates for hypertensive women over the age of 70.

"My point is that we can pour millions of dollars into research, but the

***"In 1990, there were 37.5 million adult women over age 50 in the United States. For them, this study promises not only a new century in women's health but a new era as well."***

yield will be low if women and their physicians fail to use this knowledge to improve women's health."

Dr. Lenfant closed by reemphasizing the NHLBI's strong commitment to addressing new opportunities to improve women's heart health through science and public health education. And he urged conference participants to help the Institute set a research agenda for the 21st century to advance women's heart health. ■

(continued from page 1)

science to people and does not exploit the value of the science. There's an enormous amount of preventable morbidity and mortality."

An example: "We [the RAND Corporation] looked at five California hospitals and found that 25 percent of people who needed a cardiac revascularization procedure were not offered it. At the same time, those hospitals were performing procedures on people who did not need them."

And an example from another RAND study: "We took 400 randomly selected hospitals across the U.S. and grouped them according to which had the best quality of care" for inpatients with heart disease. The alarming result, said Dr. Brook, was that "there is at least a 6 percent difference in outcome based on the quality of care between the best hospitals and worst hospitals." What



caused the difference? "Doctors' knowledge and action, nurses' knowledge and action, diagnostic methods, and using intensive care units.

"These differences represent a 40 percent difference in death rate," Dr. Brook cautioned. "It's safe to say that this variation may represent 50,000 to 100,000 excess deaths a year.

"That's the message," he said. "We are clinically practicing in a chaotic environment where some are getting treatment they don't need and others aren't getting the treatment they do need."

What is the solution? Dr. Brook outlined three goals for cardiovascular health care in the 21st century:

- Provide necessary care for everyone.
- Eliminate waste and provide what is necessary more efficiently.

- Improve the mean level of quality and decrease its variation as a function of which physician or hospital one sees.

Dr. Brook imagined an interesting clinical dilemma for the future if these goals are not met. "Imagine a 50-year-old with chest pain. There's a call to 911 and an ambulance arrives. Imagine that there's a computer in the ambulance—one the patients can reach—listing the quality and efficacy of the nearby hospitals. What if they were able to reach up and see that within a 7-minute radius, they could choose between hospitals A, B, C, and D? What if this computer told them, 'If you choose the coronary care unit in hospital A, your death rate will be 20 percent. If you choose B, your death rate will be 10 percent.'

"That's competition. We need a system where hospitals all have the same quality of care," he urged.

"We need to develop in the next

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few years a better knowledge about the proportion of science that is implemented. We need to

have real-time, useful data about quality so that we can practice better medicine and guarantee to all Americans that they get necessary, high-quality care when they need it. And we need financial incentives to increase the likelihood and rapidity with which all this happens."

Next at the podium was Dr. Eugene Braunwald, professor of medicine at Harvard Medical School in Boston, MA. He reviewed developments in cardiovascular medicine in this century and gazed into a medical crystal ball to see what may lie ahead.

Despite overwhelming progress, he said, there is much evidence that "the cardiovascular war has not yet been won." For example, deaths from heart diseases have risen steadily from 1900 through 1994. Why? "The reasons are largely demographic," Dr. Braunwald noted. "The population has increased in number and is more pre-



dominantly aging—and the baby boom generation is reaching the age for development of coronary heart disease."

Taking the global view, he noted that world deaths due to CVD equaled 29 percent of all deaths in 1990. That number is projected to increase to 36 percent by the year 2020, according to the World Health Organization.

What obstacles remain in the fight to eradicate CVD? "There are large gaps of knowledge among the public as well as among professionals," Dr. Braunwald said. "Also, available therapies are not applied broadly, and the available therapies are inadequate. And re-emergence of coronary risk factors, especially in teenagers, is of concern." Moreover, he pointed out, one-half of patients with coronary heart disease have none of the established risk factors—so other, still unidentified factors must be at work.

What might they be? Estrogen deficiency, homocysteine, and plasma fibrinogen are some that have emerged from research (see box on page 15). And "in the newly emergent field of

population genetics, I think there are some very important answers," said Dr. Braunwald. Already, familial high blood cholesterol and several other cardiovascular disorders have been linked to abnormalities in single genes.

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***"Those of us in the field of CVD have participated with the NHLBI in a remarkable health revolution that has turned back the 20th century epidemic of CVD."***

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"We have the knowledge to prevent cardiovascular disease," Dr. Braunwald summed up. "Genetic predisposition, coronary risk factors, hypertension, high cholesterol, coronary disease events—all these need aggressive treatment" as well as continued, concentrated research, he urged.

Continuing in the same vein, Dr. Henry Blackburn celebrated the advances of the past 50 years and laid out the challenges ahead. Dr. Blackburn, who is Mayo professor emeritus of public health at the University of Minnesota in Minneapolis, focused on epidemiologic trends and projections.

"Those of us in the field of CVD have participated with the National Heart, Lung, and Blood Institute in a remarkable health revolution that has turned back the 20th century epidemic of CVD," he remarked.

"In three decades, death rates have fallen by more than half for heart attack and by two-thirds for stroke. Death rates both in and out of the hospital have plummeted, and survival has improved. Population levels of the major CVD risk factors—cigarette smoking, blood pressure, and blood cholesterol—have decreased steadily.

### IF YOU MISSED IT

You didn't know about the conference? You couldn't get to San Francisco? Here are three postconference options you may want to consider:

- Buy audiocassette tapes of the sessions you wanted to hear. They're \$10 each plus \$2 shipping charge for the first tape and \$1 for each additional tape. For a catalog and order form, contact The Hour Recording Company, P.O. Box 1299, St. Petersburg, FL 33731, 813-323-1851; e-mail: HourRecord@juno.com.
- Order a videotape of the opening sessions (#55-857, \$15) from the NHLBI Information Center, 301-251-1222.
- Exchange ideas and information with conference participants by subscribing to the postconference ListServ, a free e-mail network. Here's how:
  - Address an e-mail message to [LISTSERV@LIST.NIH.GOV](mailto:LISTSERV@LIST.NIH.GOV).
  - Type anything in the subject field or leave it blank.
  - Type the command SUBSCRIBE HEART-HEALTH in the body of the message and send the message.
  - The LISTSERV will send you a confirmation. Hit the reply button, type OK in the body of the reply, and send the message back to LISTSERV.

And society's mores have changed favorably regarding smoking, eating, and physical activity."

But, said Dr. Blackburn, "We should nevertheless be warned by current developments that threaten this revolution."

For example, he said, "epidemiologic observations indicate that we have plateaued in certain death rates and in some risk factor levels, while other CVD rates, after a period of decline, are on the rise again." For example, he said, hypertension control efforts are losing ground, and "many Americans appear to be backsliding regarding healthy lifestyles. Inactivity is a major factor in the rise in weight, particularly among youth."

What are the reasons? Dr. Blackburn thinks that "shifts in national research priorities may threaten the enterprise and the infrastructure of cardiovascular prevention, so effectively built in pioneer efforts by the NHLBI." He also sees signs of a backlash against health promotion: "Junk science is a term now being used to derogate legitimate study results as well as frivolous research claims."

*"The past 50 years have seen tremendous advances in cardiovascular care, and our medical research will undoubtedly continue to pay handsome dividends in the future. We can only imagine what breakthroughs lie ahead."*

Of equal concern, said Dr. Blackburn, is a public "that doesn't understand, hears something different every year," and is unclear about what to do—forgetting what good science has shown. "I am reminded," he said, "of the admonition of one of my medical

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## EMERGING RISK FACTORS – SCIENCE'S AGENDA FOR THE NEXT CENTURY

One of the most remarkable health advances of the past 50 years has been a better understanding of how blood pressure, cholesterol, and other factors increase a person's risk of heart disease. Yet some puzzles remain. For example, why do most heart attacks happen in patients with moderately high, but still average, blood cholesterol? What still unidentified factors might work with known risk factors to trigger heart disease?

More than 300 possible new risk factors have been proposed; of those, nine are "now entering prime time," said Dr. Jeffrey M. Hoeg, chief, Section on Cell Biology, Molecular Disease Branch, NHLBI, at a national conference press briefing. That is, they are close to or are now being studied in clinical trials in humans. Here's the latest on the three most likely:

**Homocysteine:** Findings from the NHLBI's Framingham Heart Study and elsewhere show that high levels of this amino acid may contribute to heart disease, stroke, and a reduced blood flow to the hands and feet. Researchers believe that homocysteine may work in one or all of these ways: be involved with atherosclerosis; make blood more likely to clot; and make blood vessels less flexible and less able to widen to allow increased blood flow.

Homocysteine levels are determined partly by genetics but also by the consumption of vitamins, especially folic acid, B<sub>6</sub>, and B<sub>12</sub>. Those vitamins help process homocysteine and in theory could be used to control abnormally high homocysteine levels. However, people who follow a well-balanced diet should get plenty of these vitamins; recommended daily values are 400 micrograms for folic acid, 2 milligrams for B<sub>6</sub>, and 6 micrograms for B<sub>12</sub>.

**Lp(a):** This is a type of low density lipoprotein, often called the "bad cholesterol" because it carries most of the cholesterol in the blood. Lp(a) is now thought to be a risk factor for early onset of heart disease. Apparently the Lp(a) molecule has an extra protein particle attached; the particle resembles the protein involved in blood clotting. Lp(a) does its damage by preventing the breakup of clots.

**Infectious agents:** Viruses and bacteria may harm blood vessel walls, starting the atherosclerotic process. For example, researchers have found a kind of herpes virus, cytomegalovirus (CMV), in lesions from diseased coronary arteries. NHLBI researchers found that patients with antibodies for CMV have a high rate of artery reclosure after the artery is cleared out with an atherectomy. Chlamydia pneumoniae, an airborne bacterium that causes respiratory infections, may be another culprit. In small pilot studies, chlamydia-infected patients who had had a heart attack were treated with antibiotics and had a reduced risk of a second heart attack.

How might these infectious agents work? Microbes invading the vessel wall could trigger an immune response so that the tissue tries to heal itself, forming a type of scar tissue that can narrow the vessel. Or the blood vessel also can narrow as it tries to "remodel" itself; the vessel constricts, producing a smaller opening.

"We now realize that atherosclerosis is more than just an accumulation of sludge and rusty pipes—the blood vessel is actually a living structure," said Dr. Peter Libby, director, Vascular Medicine and Atherosclerosis Unit, Brigham and Women's Hospital, Boston, explaining the connection between infection, inflammation, and atherosclerosis. Like any other tissue, this living structure can react to invading microbes, triggering an inflammatory response that changes the vessel's shape and character.



*(continued from page 15)*

school mentors: 'Keep an open mind but not so open that your brains fall out.'

"Where do we go from here?" he asked. "There is a clear challenge ahead of us internationally. Enough is known about the effects of CVD—solutions should be pursued. Those of us working in prevention know the answers: promotion of heart-healthy strategies, school-based education, and regional efforts need to be carried out, especially legislative efforts."

Also, "a healthy stand must be maintained against the health backlash. And current evidence points to an urgent need for new research."

"In closing," Dr. Blackburn said, "I emphasize at this 50th celebration of our partnership with the NHLBI that a population strategy, wedded to a modern medical strategy, is the more effective and efficient approach to prevention. In this effort, the medical community, the NHLBI, voluntary and government health agencies, and the people all have a role." ■

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anatomical equipment needed to properly process animal fat." This point was made graphically in a startling closeup of brachial arteries immediately after high-fat meals. "The results are dramatic," said Dr. LaRosa. "Just minutes after eating, a high-fat meal can substantially restrict the arterial passages."

Compelling evidence also comes from Japan, he noted. "Dietary changes in Japan began after the loss of the war. Being poor after the war, and basically vegetarian to begin



with, the Japanese didn't change their basic diet until after the 1950s. Then, they started selling us TVs, VCRs, and all those other cool electronics. We got even with them by selling them hamburgers.

"Recent trends in Japan are the opposite of those in the United States," he said. "Animal fat intake has risen and so has the rate of coronary disease." Moreover, studies of Japanese people who emigrate to the United States demonstrate a linear increase in saturated fat intake, blood cholesterol levels, and coronary risk.

"I am extremely confident," he concluded, "that diet is by far the most important factor in coronary heart disease. Metabolic studies reproduced in clinical trials show that we are achieving success over and over again. Diets do work, even if the patients don't always follow them!"

Even if we were not natural herbivores, he added, we would still need to watch our fat intake. Dr. LaRosa illustrated with a case study: his cat, Thelonious.

"Thelonious has lived a very care-free life, no doubt assuming that as a natural carnivore he could eat whatever he wanted. So I showed him this slide. As you can see, in this study, cats who ate a high-fat diet raised their total cholesterol substantially and also increased the mean intimal thickness of the artery wall.

"So even carnivores," he noted, "given enough animal fat and sedentary living — and I guarantee you that no one is more sedentary than Thelonious — can develop atherosclerosis."

Dr. Scott M. Grundy considered the implications of recent clinical trials, focusing on questions that have been answered and problems that have yet to be resolved. He is director of the Center for Human Nutrition, University of Texas Southwestern Medical Center in Dallas.

"Perhaps the most pressing question," he said, "is whether lower-

ing cholesterol really reduces the risk of heart disease at all." Although the early trials were ambiguous, this cause-effect relationship has now been documented beyond any doubt, he said. For example, following a meta-analysis by Dr. David Gordon of NHLBI's Division of Heart and Vascular Diseases, Dr. Grundy said, "the combined results point to an overall positive effect of lowering cholesterol: a reduction of coronary heart disease of 15 to 45 percent."

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***"We're seeing the enthusiasm for aggressive drug treatment diminishing the stress on dietary treatment. We have to ask ourselves if this is altogether a good thing."***

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A related question is whether lowering cholesterol reduces recurring coronary events for patients who already have coronary heart disease. Again, results from a meta-analysis of secondary prevention trials "point to a highly significant reduction of about 25 percent."

"A later study from the statin trials confirms these findings," he noted. "These drugs produced a 34 percent reduction in total coronary events." Moreover, the statin trials "demonstrated conclusively that cholesterol lowering is not clinically dangerous."

The next question asked was whether lowering cholesterol works in special populations such as smokers and people with diabetes. "Once again, experimental trials—this time the Scandinavian 4S study—proved that the answer was yes," said Dr. Grundy. Does it also hold for women? The 4S study again said yes. And the elderly? Again the 4S trial showed marked improvement in the treatment group older than age 60,



as did another study of the effects of statin drugs on people in that age group. So we can say, yes, lowering cholesterol is effective across the board.

"Importantly, the 4S study also showed a reduction in strokes," he added, "an outcome that we do not clearly understand and that warrants further research.

"The biggest remaining question is the cost-effectiveness of lowering cholesterol," Dr. Grundy said. For secondary prevention, the trials have convincingly demonstrated that lowering cholesterol is cost-effective. For primary prevention in low-risk individuals, this is still an open question.

Other issues that remain:

- In secondary prevention, "we have to figure out exactly how low we should drive the cholesterol level, and whether or not we should treat patients who have low cholesterol already."
- In primary prevention, "who should receive aggressive cholesterol-lowering therapy? Just the estimated 12 million people across the country who are seen as high risk, or also the estimated 40 million classified as having moderate risk?"
- "How do we connect this kind of aggressive therapy to a lifetime prevention or public health approach? We're seeing the enthusiasm for aggressive drug treatment diminishing the stress on dietary treatment. We have to ask ourselves if this is altogether a good thing."

Finally, Dr. Antonio M. Gotto looked at research frontiers that point the way to cholesterol science in the 21st century. Dr. Gotto is Stephen and Suzanne Weiss Dean at Cornell University Medical College, New York, NY.

"I judge that the top [cholesterol] research advances of the past 10 years

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## Mark Your Calendar

- July 12-15, 1998: 13th International Interdisciplinary Conference on Hypertension in Blacks, sponsored by the International Society on Hypertension in Blacks. Theme: "Metabolic Risk Factors and Hypertensive Cardiovascular Disease." Charleston Place Hotel, Charleston, SC. Call 404-875-6263.
- August 30-September 2, 1998: "Third International Heart Health Conference: Heart Health Into the Next Millenium." The 50th anniversary symposium will cover the Framingham Heart Study, NHLBI clinical trials, the National High Blood Pressure Education Program, and NHLBI national guidelines for clinical practice. Raffles City Convention Centre, Singapore. Call 65-336-3875 or e-mail [wxpsin@singnet.com.sg](mailto:wxpsin@singnet.com.sg).
- September 14, 1998: "Oxidative Stress and Disease," NHLBI 50th anniversary symposium. Theme: how oxidative stress leads to damage of biological macromolecules and how this free-radical-induced damage is involved in the causes or progression of various diseases. Lister Hill Auditorium, National Institutes of Health, Bethesda, MD. Call 301-496-4910.
- September 30-October 2, 1998. 5th National Scientific Session of the Consortium for Southeastern Hypertension Control (COSEHC). Grand Hyatt Atlanta, Buckhead, Atlanta, GA. Call 800-267-3421.
- November 8-11, 1998: American Heart Association, 71st Annual Scientific Sessions, Dallas Convention Center, Dallas, TX. Call 214-706-1543 or check this Web site: [www.amhrt.org/Scientific/confer/sessions/sessions.html](http://www.amhrt.org/Scientific/confer/sessions/sessions.html). ■

### A BIRTHDAY FOR FRAMINGHAM

Fifty years have passed since researchers began tracking the course of cardiovascular disease in a small New England town. This September, the now-famous Framingham Heart Study in Massachusetts will celebrate its 50th birthday with 2 days of special events. Tentative plans for the first day include a tribute to the entire town and the 6,000 people who have participated in the NHLBI-sponsored study; television's prime time physician, Dr. Tim Johnson, will moderate. That night there will be a banquet to honor the scores of researchers who have conducted the study. Day two features a scientific symposium at which researchers will present the latest findings from Framingham data. National media coverage is expected, and you can read all about it in a future *HeartMemo*.

(continued from page 17)

have been statin drugs, gene therapy, and inflammatory responses." Starting from these, he said, "we can anticipate the primary concerns of tomorrow."

*"Calorie intake has remained fairly stable over the past 30 years, and around two-thirds of Americans still eat more than 30 percent of their calories as fat."*

One of them will be to determine exactly how lipid-lowering drugs exert their anti-atherosclerotic effects in the arteries, he said. This basic research

on mechanisms may lead to new ways of attacking the atherosclerotic process. Statin drugs for stroke prevention are an important new direction, Dr. Gotto said. And researchers need to determine and compare the clinical benefits of statins versus other cholesterol-lowering drugs.

An extremely promising lead comes from research on gene therapy to reverse atherosclerosis. "In an experiment that I am working on now, we wanted to see if we could take coronary arteries that were totally clogged and unblock the vessels with gene therapy," he related. "Initially we worked with pigs. We observed a completely blocked artery for 3 weeks and then added the therapeutic gene.

"We waited another 4 weeks and

then observed the artery," he said. "We found that blood flow had been completely restored. We took these data to the FDA and have obtained approval to test this gene therapy on 15 human patients."

Finally, he said, the role of inflammation in atherosclerosis will be a research focus in the next century. Reducing this inflammatory response—for example, with medication—is an important line of inquiry.

"In conclusion," Dr. Gotto observed, "I want to reaffirm that the relation between cholesterol modification and reduction in coronary heart disease is well accepted. Substantial strides have been made in refining our understanding of lipid-based risk, but clearly much work remains to be done." ■

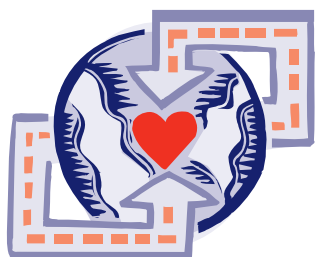


## HeartFacts: Heart Data

### REPORT CARD: THE HEART OF AMERICA'S CHILDREN

Heart disease begins early in life. How are America's children doing? Here's an update:

- ☒ About 1 percent of U.S. children and adolescents have high blood pressure.
- ☒ Average blood pressures tend to rise with age—slowly before adolescence and faster after puberty.
- ☒ Children's high blood pressure tends to persist into adulthood, even for children with high-normal pressure.
- ☒ Average blood cholesterol levels in American children and adolescents are too high.
- ☒ Children and adolescents with elevated blood cholesterol levels are more likely to have elevated levels as adults.
- ☒ Children typically start smoking cigarettes in grades 5 and 6.
- ☒ Eleven percent (or 4.7 million) of those ages 6 to 17 are overweight—more than double the percentage of a decade ago.
- ☒ Up to 20 percent of overweight children remain so throughout life.
- ☒ Most children accumulate at least 1 hour of physical activity daily, but a sizable percentage do not get frequent, vigorous, continuous activity.
- ☒ Of high school students, only about half of boys and a quarter of girls do vigorous physical activity three or more times a week.
- ☒ Activity levels of girls are below those of boys and tend to decline with age.



# HeartNet

Here are some Web sites that offer useful information on special populations:

## Get in Shape on the Web

Remember Dr. C. Everett Koop, former surgeon general and health conscience of America? He's founded a lively Web site called Shape Up America! Its goal is to offer "the latest information on safe weight management and physical fitness." It does this with some nifty interactive "rooms." For example, click on the "cyberkitchen," give it some vital statistics about your height, weight, etc., and get the total daily calories you need to maintain or lose weight, with customized meal plans to help you do this. Click on the BMI room, enter some vitals, and you'll learn your body mass index, plus what it means in terms of fitness and overweight. The health and fitness room overflows with interesting exercises, including some you probably never heard of. For instance, to make walking more interesting, Shape Up America suggests a "total walking plan" that includes animal walks (walk like a bear, a giraffe, etc.), walking backward, and other unusual variations. There's also a professional center, a media center, and a library. The address is <http://www.shapeup.org>.

## National Women's Health Information Center

<http://www.4woman.org>

This site provides answers to many frequently asked questions about women's health as well as news releases, links to Federal government and other sites that deal with women's health, and access to several online medical resources including MEDLINE and online medical dictionaries. The database, which you can search by topic, will point you to publications of interest and link you to their download site if available.

## Administration on Aging

<http://www.aoa.dhhs.gov>

For information on resources such as Eldercare, legal resources, or links to Web sites of interest to older Americans, go to this Web site. An office of the Department of Health and Human Services, the Administration on Aging, offers a multitude of resources including directories of nursing homes, State agencies, and other Web sites. A variety of fact sheets and publications produced by the Administration on Aging also are available.

## The National Rural Health Association

<http://www.nrharural.org>

The National Rural Health Association provides resources and support to health care professionals who work in rural areas. Among the items of interest on its Web site are a bulletin board for members to exchange ideas, information on advocacy for rural health issues, upcoming rural health meetings, and links to others sites that provide related resources.

## The Disability Resource

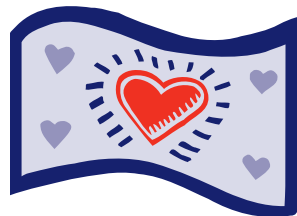
<http://www.disabilityresource.com>

The Disability Resource provides information and resources for people with all types of disabilities. Its Web site hosts chat rooms, lists upcoming events, sells publications of interest, and allows you to search for other resources using a variety of Internet search engines. Members can schedule chats on specific topics and design their own Web page.

## National Health Information Center

<http://nhic-nt.health.org>

Finally, if you work with another special population and do not know where to look for information, there's the National Health Information Center. This site provides a searchable database of Federal government and private clearinghouses—so you can find all those toll-free numbers and Web sites in one place. It also lists national health observances such as National High Blood Pressure Education Month and National Cholesterol Education Month. ■



## HeartFunds

### GETTING A GRANT FROM THE GOVERNMENT

Tracking down sources of money for cardiovascular health research and education can be frustrating and time-consuming. Here is some basic information on two sources you might consider: the National Institutes of Health (NIH) and the Centers for Disease Control and Prevention (CDC) in Atlanta, GA.

The NIH, NHLBI's parent agency, funds biomedical research that aids in the detection, diagnosis, and treatment of disease and disability. NIH-funded grants in cardiovascular disease range from basic research on atherosclerosis to innovative cardiovascular health education programs in schools and communities. Proposals must have a research or evaluation component to compete for NIH funding.

To find NIH-sponsored funding opportunities that might fit your project, the key source is the NIH Guide for Grants and Contracts, a

periodical that lists current requests for grant and contract proposals. It's accessible through the Internet at [www.nih.gov/grants/oer.htm](http://www.nih.gov/grants/oer.htm). The site allows you to search current and back issues of the Guide for announcements related to your interests. You can receive weekly e-mail updates by registering for the LISTSERV option.

You can also call ASKNIH at 301-435-0714 or e-mail questions to [asknih@od.nih.gov](mailto:asknih@od.nih.gov). Grant application forms and instructions are available from either the Guide Web page or the ASKNIH phone number.

The CDC funds research and programs that promote health and quality of life by preventing and controlling disease, injury, and disability. Areas of interest include public health concerns such as chronic disease prevention, health promotion, nutrition, and diabetes control.

CDC grant announcements are published in the *Federal Register*, which you can find at local libraries. CDC funding opportunities and

application forms are available online at <http://www.cdc.gov/funding.htm>. Questions can be e-mailed to [netinfo@cdc.gov](mailto:netinfo@cdc.gov). Application packets can be ordered by telephone, 404-332-4561.

### GRANTSNET HELPS SCIENTISTS, STUDENTS FIND RESEARCH FUNDS

A new Web site helps biomedical scientists, students, and faculty find funding sources. GrantsNet was developed by the Howard Hughes Medical Institute and the American Association for the Advancement of Science. According to its founders, the site "provides one-stop shopping for grants, fellowships, and other sources of support." You can use it for free, although you are asked to register. Automatic e-mail notification of updates is offered as an option. Here's the address: [grantsnet@aaas.org](mailto:grantsnet@aaas.org). ■

## New at the NHLBI Information Center

### Problem Sleepiness in Your Patient (#4073, \$2.50 each).

Getting sleepy at the wrong time can cause many problems ranging from poor functioning at home, work, and school to life-threatening auto and industrial accidents. Primary care physicians are in an ideal position to identify the problem and start treatment. This physicians' guide covers the causes, consequences, identification, and management of problem sleepiness. It includes sample

questions for assessing patients, a comprehensive reference list, and sources for more information.

### Facts About Problem Sleepiness (#4071, single copy free).

The companion piece for patients, this lay-language fact sheet explains what is known about the causes, diagnosis, and treatment of different sleep disorders. Special sections cover shift workers, adolescents, and medical conditions and drugs that can disrupt sleep. The

fact sheet emphasizes tips for avoiding problem sleepiness and its consequences.

### Educational Strategies To Prevent Prehospital Delay in Patients at High Risk for Acute Myocardial Infarction (#3787, \$3 each).

For the estimated 13 million Americans with cardiovascular disease, the risk of heart attack and death is five to seven times higher than for the general







# HeartSources

## PUTTING THE RIGHT SPIN ON NUTRITION

If you work with elementary-schoolers, you may want to check out the Special Program in Nutrition (SPIN).

New from the Gladstone Institute of Cardiovascular Disease in San Francisco, CA, SPIN is a lively and entertaining nutrition education program for third- and fourth-grade students. It was pilot-tested and evaluated in the Millbrae, CA, elementary school district for 2 years and proved so popular that the Institute is making it available nationwide.

The two-volume program includes:

- 27 lessons for third-graders and 7 lessons for fourth-graders. The lessons include objectives for students, a lesson plan, background on the topic for teachers, worksheets, activities, homework assignments, extra materials such as flash cards and posters, and an evaluation form for the teacher.
- A parents' program with plans for 10 meetings. Each plan contains objectives, background information, an agenda, procedures, handouts, and other supplements.
- An in-service training section for teachers.

SPIN is a flexible program that can be integrated into an established health curriculum. It can be used with or without the in-service teacher training, the parental component, or the classroom tastings. The curriculum costs \$30, a companion cookbook \$10, and a curriculum/cookbook set \$35; prices include shipping.

To find out more or to order materials, contact the Gladstone Institute of Cardiovascular Disease, P.O. Box 419100, San Francisco, CA 94141, 415-826-7500.

## SEND YOUR EMPLOYEES ON A HEALTH TRIP

The Wellness Councils of America (WELCOA) has launched HealthTrip, a worksite program to promote physical activity.

Developed under a grant from the Centers for Disease Control and Prevention, HealthTrip contains 13 modules on diverse health issues such as physical activity, high blood pressure, heart health, cholesterol awareness, low-fat eating and shopping, and weight control.

Employees who participate in HealthTrip embark on a fictitious journey across the country to 13 familiar-sounding cities, where they learn how to make changes to improve their health. At each stop, travelers receive handouts and a personal passport log to record mileage earned through physical activity. Along the way, they practice healthy lifestyle choices, log their activity points, and get

recognition and rewards.

Here is the HealthTrip itinerary, with areas of interest: Aerobiquerque (exercise, fitness basics, proper shoes), Cholesterol Springs (low-fat cooking, food labels), The Great Smokey Mountains (quitting smoking, secondhand smoke), Heartford (heart-smart eating, lifestyle tips), Las Veggies (salad bar savvy, eating more fruits and vegetables), Minnepeopleis (prenatal care, family activities), Newbalancewick (stress management), OnTheRocks Island (alcohol use and abuse), Pressureburg (blood pressure control, salt substitutes), Weightville (diets and food cues), Wella Wella (self-care, immunizations, and checkups), and YoSafety National Park (safety belts, bike and sun safety).

The HealthTrip "suitcase" also contains an 80-page tour director's planning guide with low-cost motivational ideas to get people on board, 58 camera-ready handouts, a poster to promote the program, and a customized passport cover.

For more information or to order HealthTrip, contact the Wellness Councils of America, 7101 Newport Avenue, Suite 311, Omaha, NE 68152, 402-572-3590. Each suitcase costs \$89 plus 8 percent

shipping and handling; discounts are available for bulk quantities.



## DO YOU KNOW YOUR NUMBERS?

Here are the levels for healthy adults for blood cholesterol and blood pressure:

## BLOOD CHOLESTEROL LEVELS

	Desirable	Borderline-High	High
<b>Total Cholesterol</b>	< 200 mg/dL	200-239 mg/dL	≥ 240 mg/dL
<b>LDL Cholesterol</b>	< 130 mg/dL	130-159 mg/dL	≥ 160 mg/dL
<b>HDL Cholesterol</b>	a low HDL cholesterol is < 35 mg/dL		

## BLOOD PRESSURE LEVELS

	Systolic		Diastolic
<b>Optimal</b>	<120 mm Hg	and	<80 mm Hg
<b>Normal</b>	<130 mm Hg	and	<85 mm Hg
<b>High-Normal</b>	130-139 mm Hg	or	85-89 mm Hg
<b>Hypertension</b>			
<b>Stage 1</b>	140-159 mm Hg	or	90-99 mm Hg
<b>Stage 2</b>	160-179 mm Hg	or	100-109 mm Hg
<b>Stage 3</b>	≥ 180 mm Hg	or	≥110 mm Hg

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## ***HeartMemo***

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